

Please add Claim 26 as follows:

*B4*  
- - 26. The method of claim 12, wherein the fabric includes one of sintered felts, coatings of coated papermaking fabrics, non-wovens and films, spiral link structures, membrane and polymer matrix material. - -

REMARKS

Claims 12-21 and 26 are pending, with Claim 12 being independent. By this amendment, Claims 12, 13, 15-18 and 21 are amended, Claim 26 is added and Claims 1-11 and 22-25 are cancelled. Reconsideration in view of the above amendments and following remarks is respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made".

Unless otherwise stipulated, the amendments were made to correct editorial errors and clear up matters of form. In particular, claims 12, 13, 15-18 and 21 include amendments made to clear up matters of form indicated by the Examiner in the Office Action.

ELECTION

Applicant affirms the provisional election made by Applicant's representative, Michael Cornelison, during a telephone conference on January 4, 2002. During that telephone

conference, Group II, drawn to a method and including Claims 12-21 was elected with traverse.

It is respectfully submitted that the subject matter of all the claims is sufficiently related that a thorough search for the subject matter of any one group of claims would encompass a search for the subject matter of the remaining claims. Thus, it is respectfully submitted that the search and examination of the entire application could be made without serious burden. See MPEP §803 in which it is stated that “if the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits” (emphasis added). In fact, the Examiner asserted that two references in the prior art show the special technical feature of non-elected Group I. The Examiner’s use of specific prior art towards non-elected claims is a showing that the search and examination of the entire application could be made without serious burden. It is respectfully submitted that this policy should apply in the present application in order to avoid unnecessary delay and expense to applicant and duplicative examination by the Patent Office.

#### FORMAL MATTERS

Claims 12-21 stand objected to or rejected under 35 U.S.C. §112, 2<sup>nd</sup> paragraph. This objection and rejection is respectfully traversed for at least the reasons set forth below.

Applicant respectfully submits that the amendments provided in this response to Claims 12, 13, 15-18 and 21 obviate the Examiner’s concern to the form of the claims. In other

words, by this amendment, the claims identified by the Examiner have been amended to clear any matters of form. Withdrawal of the objection and rejection is respectfully requested.

**PRIOR ART REJECTIONS**

Claims 12 and 15-21 stand rejected under 35 U.S.C. §102(b) over Kusano et al. (U.S. Patent No. 5,041,304). Claims 12-14 stand rejected under 35 U.S.C. §102(b) over Paskalov et al. (U.S. Patent No. 5,344,462). Claims 12-14 and 19 stand rejected under 35 U.S.C. §102(b) over Paskalov et al. (U.S. Patent No. 5,328,576). Claims 12-19 stand rejected under 35 U.S.C. §102(b) over Reiner et al. (U.S. Patent No. 5,622,773). Claims 17 and 20-21 stand rejected under 35 U.S.C. §103(a) over Reiner et al. Claims 12-18 stand rejected under 35 U.S.C. §102(b) over Milding et al. (International Publication No. WO 9627044). Claim 19 stands rejected under 35 U.S.C. §103(a) over Milding et al. Claims 12-14 stand rejected under 35 U.S.C. §102(b) over Komatsu et al. (U.S. Patent No. 4,743,494). Claims 12-13 stand rejected under 35 U.S.C. §102(b) over Jeffrey (European Patent Application Publication No. 0396329A1). Claims 12-13 and 15-16 stand rejected under 35 U.S.C. §102(b) over Hiratsu (Japan Patent Abstract Publication No. JP354126276A). Claims 12-13, 15-17 and 19 stand rejected under 35 U.S.C. §102(b) over Nomura (U.S. Patent No. 4,824,444). Claims 12-13, 15-16 and 18-19 stand rejected under 35 U.S.C. §102(b) over Yamamoto et al. (U.S. Patent No. 4,594,079). These rejections are respectfully traversed for at least the reasons set forth below.

Applicant respectfully submits that none of the references teach a method for treating papermachine fabric having one of synthetic yarns and fibers, the method including the step of continuously subjecting at least one surface of one of a layer and a component of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in amended independent Claim 12. The above references and their non-disclosure or lack of teaching of the subject matter of the claims will be discussed in greater detail below.

Kusano et al.

The Examiner asserts that Kusano discloses plasma treatment of nylon or non-woven fabrics, with an atmospheric pressure plasma that contains perfluorocarbons or halogenated hydrocarbons, such as CF<sub>3</sub>, perflourocyclopentane, fluoroethylene, etc. Kusano's fluorated compounds are used in a mixture with an inert gas, such as He, when forming the plasma. However, Kusano does not disclose the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in Claim 12. Therefore, Kusano does not disclose the subject matter of Claim 12. Claims 15-21 depend from Claim 12, and are believed to be allowable over Kusano for at least the reasons discussed above regarding the features recited in Claim 12 that are not present in Kusano. Accordingly, Claims

12 and 15-21 are not anticipated by Kusano. Withdrawal of the rejection of Claims 12 and 15-21 over Kusano is respectfully requested.

Paskalov et al. ('462)

The Examiner asserts that Paskalov discloses the treating of fabrics made of natural or synthetic fibers with plasmas from inorganic gases, inclusive of O<sub>2</sub> and air. Paskalov further discloses a method for enhancing the hydrophilic surface properties of materials by treatment in a low temperature plasma of inorganic gas, with the improvement comprising the addition of water vapor to the primary inorganic gas. Paskalov also teaches that the added water vapor has been found to substantially shorten the treatment time required to obtain the desired modified surface properties of the treated materials. See column 1, line 59-column 2, line 21 and column 3, line 38-51.

Therefore, Paskalov discloses a plasma process in a water vapor added plasma gas atmosphere. Paskalov clearly does not disclose the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in Claim 12. Accordingly, Paskalov does not disclose the subject matter of Claim 12. Claims 13 and 14 depend from Claim 12 and are also believed to be allowable over Paskalov for at least the reasons discussed above. Thus Claims 12-14 are not anticipated by Paskalov. Withdrawal of the rejection of Claims 12-14 over Paskalov et al. '462 is respectfully requested.

Paskalov et al. ('576)

The Examiner asserts that Paskalov '576 contains the teaching of Paskalov '462, plus a second plasma treatment that polymerizes the hydrocarbon CH<sub>x</sub> for adherent deposition of a coating. Paskalov '576 discloses a pretreatment in a low pressure plasma comprised of a mixture of oxygen and water vapor or a mixture of inorganic gas and water vapor. This is followed by treating the material in a low temperature methane plasma. Paskalov '576 teaches that the material 1 to be treated is placed in to the vacuum chamber 2. Following treatment, the material 1 is removed from the chamber 2 by opening the end closure 7. The materials have to be treated individually and then taken out and the next sample put into place.

Therefore, the material 2 is not continuously subjected to treatment, as recited in Claim 12. Moreover, the treatment disclosed in Paskalov '576 is not solvent free, as recited in applicant's Claim 12. That is, water is used in the plasma atmosphere of Paskalov. In addition, the vacuum chamber 2 of Paskalov does not disclose self sealing fabric entry and exit openings, as recited in Claim 12. In summary, Paskalov does not disclose at least the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in independent Claim 12. Accordingly, Paskalov '576 does not anticipate Claim 12. Claims 13, 14 and 19 depend from Claim 12, and are also believed to be allowable over

Paskalov for at least the reasons discussed above. Withdrawal of the rejection of Claims 12-14 and 19 over Paskalov et al. '576 is respectfully requested.

Reiner et al.

The Examiner asserts that Reiner teaches a two step plasma procedure for treating fabrics made up of fibers, using a first plasma that may be O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, He, etc., which activates the surfaces for subsequent treatment. The second plasma uses organic compounds, such as hydrocarbon, fluorocarbons or siloxanes which plasma polymerize for adhering coating. The Examiner asserts that while Reiner's organic compounds are preferably gas at room temperature, they may also be liquids that may be entrained in an inorganic gas for introduction into the plasma. However, Reiner does not disclose the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in Claim 12. Accordingly, Reiner does not anticipate Claim 12. Claims 13-21 depend from independent Claim 12, and are also believed to be allowable over Reiner for at least the reasons discussed above. Withdrawal of the rejection of the claims over Reiner is respectfully requested.

Milding et al.

The Examiner asserts that Milding discloses types of fibers that make up the material for choosing from O<sub>2</sub>, NH<sub>4</sub>, CF<sub>4</sub>, Ar, He, and organic unsaturated gases for the gases in the

plasma. However, applicant respectfully submits that Milding does not disclose the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in independent Claim 12. Claims 13-19 depend from independent Claim 12, and are also believed to be allowable over Milding for at least the reasons discussed above. Withdrawal of the rejection of the claims over Milding is respectfully requested.

Komatsu et al.

The Examiner asserts that Komatsu teaches plasma treating fabric with oxidizing gases, such as oxygen mixed with N<sub>2</sub>, air, Ar or He. The fabric is made of polyolefin non-woven fibers, and may be used for purposes such as filters, packaging, or sanitary napkins. However, applicant respectfully submits that Komatsu does not teach the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in independent Claim 12. Accordingly, Komatsu does not anticipate Claim 12. Claims 13 and 14 depend from independent Claim 12 and are also believed to be allowable over Komatsu for at least the reasons discussed above. Withdrawal of the rejection of Claims 12-14 over Komatsu is respectfully requested.

Jeffrey et al.

The Examiner asserts that Jeffrey teaches plasma treating materials that may be organic and in the form of fibers or woven fabrics or membranes, that may be used as filters. The plasma is made with compounds that supply hydroxyl groups, such as water or ethylene glycol or monhydric alcohols of 1-4 C, etc. That is, Jeffrey specifically discloses the use of water or ethylene glycol in its plasma compound. Applicants respectfully submit that Jeffrey does not disclose the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in independent Claim 12. Therefore, Jeffrey does not anticipate Claim 12. Claim 13 depends from Claim 12 and is also believed to be allowable for at least the reasons discussed above regarding Claim 12. Withdrawal of the rejection of Claims 12 and 13 over Jeffrey is respectfully requested.

Hiratsu

The Examiner asserts that Hiratsu teaches plasma treating paper or (non) woven fabric with a gaseous silicon compound that might be a silaxane or tetramethylsilane. However, Hiratsu does not teach the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in independent Claim 12. Therefore, Hiratsu does not anticipate Claim 12. Claims 13, 15 and 16 depend from Claim 12 and are

also believed to be allowable for at least the reasons discussed above. Withdrawal of the rejection of Claims 12, 13, 15 and 16 over Hiratsu is respectfully requested.

Nomura

Nomura discloses gas permselective membranes having a high selectivity and high flux prepared by plasma polymerizing a coating onto the surface of a microporous membrane substrate. However, Nomura does not disclose the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in Claim 12. Therefore, Nomura does not anticipate Claim 12. Claims 13, 15-17 and 19 depend from independent Claim 12 and are also believed to be allowable over Nomura for at least the reasons discussed above regarding the subject matter of Claim 12. Withdrawal of the rejection of Claims 12, 13, 15-17 and 19 over Nomura is respectfully requested.

Yamamoto et al.

The Examiner asserts that Yamamoto et al. discloses plasma polymerization gases including tetramethylsilane, tetrafluoromethane, perfluoropropane, saturated or unsaturated hydrocarbons, etc., as well as other fluorocarbons and siloxane compounds. The gas separation member disclosed in Yamamoto combines high gas separation factor and a high gas permeation rate, permitting separation of a specific gas in a concentrated form from a mixed gas. However, Yamamoto does not disclose the step of continuously subjecting at least one surface of a layer

of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings, as recited in independent Claim 12. Accordingly, Yamamoto does not anticipate the subject matter recited in Claim 12. Claims 13, 15, 16, 18 and 19 depend from independent Claim 12, and are also believed to be allowable over Yamamoto for at least the reasons discussed above. Withdrawal of the rejection of Claims 12, 13, 15, 16, 18 and 19 over Yamamoto is respectfully requested.

In summary, applicant respectfully submits that none of the cited references disclose or teach the subject matter recited in Claim 12. That is, none of the references disclose or teach a method for treating papermachine fabric including the step of continuously subjecting at least one surface of a layer of the fabric to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self sealing fabric entry and exit openings. Withdrawal of the rejection of the claims is respectfully requested.

**NEW CLAIM**

This response adds new Claim 26, which recites that the fabric includes one of sintered felts, coatings of coated papermaking fabrics, non-wovens and films, spiral link structures, membrane and polymer matrix material. Claim 26 depends from independent Claim 12, and is believed to be allowable for at least the reasons discussed above regarding the subject matter of Claim 12.

**CONCLUSION**

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable consideration and allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below to further expedite prosecution of the Application.

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,  
COHEN & POKOTILOW, LTD.

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Please charge or credit our  
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By



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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Claims 1-11 and 22-25 are cancelled.

Claims 12, 13, 15-18 and 21 are amended as follows:

12. (Amended) A method [of making or preparing papermaking or filter] for treating papermachine fabric having one of synthetic yarns and fibres, the method including the step of continuously subjecting at least one surface of one of a layer [or] and a component of the fabric [which comprises or includes synthetic yarns or fibres] to solvent free plasma treatment in a plasma chamber having a water free atmosphere and self-sealing fabric entry and exit openings.

13. (Amended) [A] The method according to claim 12, wherein said plasma treatment includes one of glow discharge, dielectric barrier discharge and spray discharge plasma to provide[s] activated sites [to improve] for subsequent coating or dyeing.

15. (Amended) [A] The method according to claim 12, wherein the plasma contains one of a silane, a siloxane, [or] and a perfluorocarbon.

16. (Amended) [A] The method according to claim [15] 12, wherein the plasma contains a silane [is] of Si(CH<sub>3</sub>)<sub>4</sub>.

17. (Amended) [A] The method according to claim [15] 12, wherein the plasma contains a siloxane [is] of Si(OCH<sub>3</sub>)<sub>4</sub>.

18. (Amended) [A] The method according to claim [15] 12, wherein the plasma  
contains a perfluorocarbon [is] of 1-6C perfluoroalkane, [tetrachloroethylene]  
tetrafluoroethylene, or a combination thereof.

21. (Twice amended) [A] The method according to claim 20, wherein the plasma [is  
diluted by] includes helium.

Claim 26 is added as follows:

- - 26. The method of claim 12, wherein the fabric includes one of sintered felts,  
coatings of coated papermaking fabrics, non-wovens and films, spiral link structures, membrane  
and polymer matrix material. - -